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N698 N70X N70Y N703 N730 N734 N738 N76X
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U1S S1206 S1212

(56) Documents cited

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(58) Field of search

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INT CL⁵ B32B, B44C, B44F

(54) Decorative panels

(57) Decorative panels having a relief pattern on a base are prepared by applying to the base a first material (12) of decorative quality whose exposed surface has poor adhesion for a second material of decorative quality; selectively removing some of the first material to expose the base at (14); applying the second material (16) of decorative quality to thus exposed base with high adhesion thereto and to overlie first material at least adjacent thereto; and selectively removing second material overlying the first material. Such decorative panels are suitable for use in furniture and kits.

Fig. 1

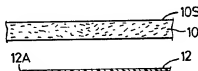


Fig. 2

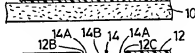


Fig. 3

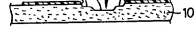


Fig. 4

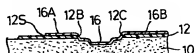


Fig. 5

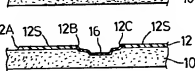


Fig. 1

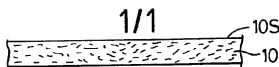


Fig. 2

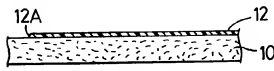


Fig. 3

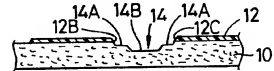


Fig. 4

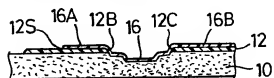


Fig. 5



Fig. 6

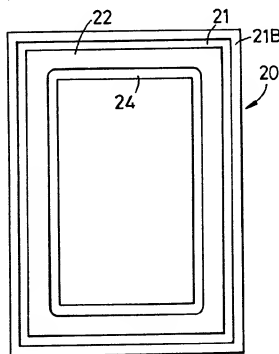
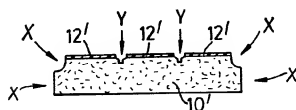


Fig. 7



DECORATIVE PANELS

This invention relates to decorative panels, particularly, but not exclusively, for furniture, cabinets and kits, including doors therefor.

Adding relief by way of attached mouldings, typically beadings, or creating relief by way of removing material, typically grooving, is old and well-established for timber panels. Selective emphasis and picking out by different colouration, whether using stains, varnishes or paints, can create satisfying effects with very high decorative content, but clearly requires individual skill, and thus is time consuming and costly.

With the advent of composite panels such as chipboards and fibreboards and their use in mass-production of furniture and kits, it became popular to apply laminated plastics finishes, which are relatively stiff, or flexible plastics film or sprayed-on coatings, such as melamine. For panels with applied relief, either beadings or grooving, it has further become feasible and popular to apply stretch plastics film, for example of polyvinyl chloride (pvc), using adhesive on the relieved board and/or integral with one side of the film and pressing the film into close contact with the

relieved panel surface using a flexible rubber or silicone membrane with high gas pressure applied to its side furthest from the board surface and evacuation applied to the other side of the film.

Yet more recently, achievement of additional decorative effects has involved use of laminated plastics film having different coloured layers at least a top one of which can be selectively removed to reveal another below.

It is an object of this invention to further enhance decorative capability of panels.

According to one aspect of this invention there is provided a method of producing a decorative panel comprising the steps of producing a relief pattern on one surface of a base board or sheet (which may be fibreboard), applying to the board or sheet first material of decorative quality (which may be melamine or plastics laminate sheet) whose exposed surface has poor or virtually no adhesion relative to second material of decorative quality (which may be pressure-applied adhered-on stretchable film such as pvc), selectively removing at least a portion of the first material to expose the board or sheet material (which removal will

usually intrude into that board or sheet material), applying the second material, and removing the second material from the remaining first material.

The first material may be applied only to selected area of the panel, and there is no reason why the base board or sheet should not be machined and/or have proud formations applied prior to application of the first material, though usually not within areas to which the first material is to be applied.

Specific implementation of this invention will now be described in more detail, by way of example, with reference to the accompanying drawing, in which:

Figures 1 to 5 show, fragmentarily, stages of progress;

Figure 6 shows a panel from its front; and

Figure 7 shows a variant panel section.

Referring to Figures 1 and 2, medium density fibreboard 10 (Figure 1) has a first decorative material applied, which is usually plastics laminated sheet or melamine film cut to size. Plastics sheet 12 is intended by what is shown in Figure 2, and has a

chamfered edge 12A. At least for plastics sheet 12, the board 10 can have its surface 10S to receive the sheet 12 prepared by application of contact or other suitable adhesive. Otherwise suitable adhesive, for example pressure-sensitive adhesive, may be pre-coated onto the sheet 12, if necessary rolled down into adhesion.

Next, machining to relieve the board 10 at 14 through its surface 10S is done, obviously going also selectively through the layer 12, see Figure 3. Fairly simple machining is indicated at 14 by way of two superposed channel grooves, one (14B) shallower and wider than the other (14A).

A second decorative material 16 is then applied over the machined-out part 14 and at least to some extent to each side, see extensions 16A,B. This second material 12, usually adhesive therefor, has relatively high and low adhesion characteristics at least for the machined out part 14 of the board 10 and the exposed decorative surface 12S of the first decorative layer 12, see Figure 4. For plastics laminate sheet 12, adhesion is often also good to the edges 12B,C of that sheet, i.e. to the base material thereof carrying its decorative top layer affording surface 12S and being adhered to the surface 10S of the board 10.

Stretch plastics film, eg pvc, as before mentioned is particularly suitable for the second decorative material 16.

Figure 5 shows the board after removal of the second decorative sheet previously at 16A,B outside the machining 14. Poor or virtually no adhesion allows the material 16A,B to be readily stripped and trimmed off.

Where there is good adherence of the second decorative material 16 to the base material of the sheet 12, the whole of the indenting at 14 will be covered by the material 16. For low adherence to base material of the layer 12, stripping off at the edges 12B,12C is readily achieved by a suitable tool, which will expose the thickness of that base material, say if of decorative value. Otherwise, i.e. for high adherence and a two-layer and colour material 16, a similar tool could strip off only the top layer thereof to expose the second colour. If desired the edge 12A could also receive high adherence material 16.

It will be appreciated that there could be more than one set of machining (Figure 3), coating (Figure 4) and stripping (Figure 5) stages for different materials 16, say starting for outermost machinings first at least

if the materials 16 could stick to each other. Where the latter is not the case, at least two, if not more, sheets of materials 16 different at least as to colour, and of different sizes, could be laid on with the smallest lowermost and fixed using a single pressing operation.

A finished panel 20 is shown in Figure 6 with an edge portion 21 of its base board that can itself have been machined, say to a bevel 21B, and stained, veneered or whatever outside a sheet of first decorative material 22. Further machining is indicated at 24 through the material 22 and into the body of the panel board and will be generally as for Figures 3 to 5.

Another finished panel is shown in Figure 7 as a section having edge portions marked X with a different shape to those reference 21 in Figure 6, and having second decorative material applied also to extend fully over its entire edge, see two arrows for X at each side of Figure 7. The same or a different second decorative material is indicated at Y as applied to machining similar to or different from that referenced 22 in Figure 6.

A preferred process for different second

decorative materials of Figure 7 is:

- (a) facing the base board 10' with first decorative material 12', conveniently melamine or laminate, fully or at least over an area extending to, conveniently into, the edge portion marked X
- (b) machining to expose, in fact into, the base board material at X and Y
- (c) applying adhesive at X and Y
- (d) pressing on second decorative sheet material, conveniently pvc, using heat, vacuum and pressure, conveniently using two sheets of different colours and sizes, one for Y and one for X
- (e) after cooling, trimming away both second decorative sheets from areas overlying the first decorative material left after machining.

CLAIMS

1. A method of producing a decorative panel having a relief pattern on a base which method comprises the steps of:
 - (i) applying to the base a first material of decorative quality whose exposed surface has poor adhesion for a second material of decorative quality;
 - (ii) selectively removing some of the first material to expose the base;
 - (iii) applying the second material of decorative quality to thus exposed base with high adhesion thereto and to overlie first material at least adjacent thereto; and
 - (iv) selectively removing second material overlying the first material.
2. A method according to claim 1 in which the first material extends over substantially all the base surface to be decorated.
3. A method according to claim 1 or 2 in which the second material overlies substantially all of the area occupied by the first material.
4. A method according to any one of the preceding

claims in which a recess intruding into the base is formed when the first material is selectively removed from the base.

5. A method according to claim 4 in which the second material has high adhesion to a side of the first material adjacent to the recess in the base.

6. A method according to claim 5 in which the second material is a multi-layer and colour material and a first layer is removed from the second material to expose a second layer of different colour at least at edges of said recessing.

7. A method according to any one of the preceding claims in which a plurality of spaced areas of the first material are removed to expose a plurality of spaced regions of the base.

8. A method according to claim 7 in which second materials of different appearance are applied to different exposed regions of the base.

9. A method according to any one of the preceding claims in which the second material is a stretchable film.

10. A method according to claim 9 in which the second is a pvc film.

11. A method according to any one of the preceding claims in which the first material is a melamine film.

12. A method according to any one of claims 1 to 10 in which the first material is a plastics laminate sheet.

13. A method according to any one of the preceding claims in which the base is a chipboard or fibreboard.

14. A method substantially as herein described and illustrated with reference to the accompanying drawings.

15. An article provided with a decorative panel as claimed in any one of the preceding claims.